

21. NEW RECORDS OF ODONATA FROM NORTH-WEST INDIA

Dragonfly fauna of north-west India is very inadequately known. Except for the reports of Singh and Baijal (1954), Mani *et al.* (1955) and Singh *et al.* (1955) on the Odonata collected from north-west Himalayas; and by Sahni (1965 & 1965a) on the Odonata of district Nainital (U.P.), no serious attempt has been made to study these interesting insects from this region.

Working on the collection of Odonata from Garhwal and Siwalik Hills we came across several species which have not been recorded from this region so far. These species are fairly common in this region and can be collected without much effort. Records of these species from this have considerably extended the known distribution of these species as given by Fraser (1933, 1934 & 1936).

Following is the list of species, arranged systematically, recorded for the first time from north-west India.

Suborder Zygoptera

Family COENAGRIIDAE

Lestes viridula Rambur

Known distribution: Peninsular India especially Deccan and west India.

New Records: Kangra (Himachal Pradesh) and Dehra Dun (U.P.)

Drepanosticta carmichaeli Laidlaw

Known distribution: Sikkim, Kalimpong and Pashoke.

New records: Chamoli, Dehra Dun, Pauri Garhwal, Tehri and Uttarkashi (U.P.).

Calicnemis pulverulans Selys

Known distribution: North Bengal and Sikkim.

New records: Uttarkashi and Tehri (U.P.).

Calicnemis miles Laidlaw

Known distribution: Upper Burma (Gokteik), Sikkim.

New records: Chamoli, Pauri Garhwal, Uttarkashi, Dehra Dun, Tehri (U.P.) and Kangra (H.P.).

Copera marginipes (Rambur)

Known distribution: Lower Burma, Java, Thailand, Ceylon, Bombay, Poona, Mahableshwar, Bengal and Assam.

New records: Dehra Dun (U.P.) and Kangra (H.P.).

Family AGRIIDAE

Rhinocypha unimaculata Selys

Known distribution: Bengal, Assam, Sikkim (Mungpoo).

New records: Dehra Dun, Chamoli, Pauri Garhwal, Tehri and Uttarkashi (U.P.).

Bayadera indica (Selys)

Known distribution: North Bengal and Assam.

New records: Dehra Dun, Chamoli, Pauri Garhwal, Tehri, Uttarkashi (U.P.) and Kangra (H.P.).

Anisopleura lestoides Selys

Known distribution: Bengal, Assam and Sikkim.

New records: Dehra Dun, Chamoli, Pauri Garhwal and Uttarkashi (U.P.).

Suborder Anisoptera

Family GOMPHIDAE

Anormogomphus kiritschenkoi Barteneff

Known distribution: Iraq, Persia, Persian Gulf, Mesopotamia, Baghdad, Zobeir, Mekran Coast and Sind.

New records: Dehra Dun (U.P.). This species has been recorded from India for the first time.

Family LIBELLULIDAE

Cratilla lineata (Brauer)

Known distribution: West coast of India, Nilgiris, Malabar, Bengal, Burma, Ceylon, Malaysia, Sunda Archipelago, Borneo, New Guinea and Philippines.

New records: Dehra Dun (U.P.).

Brachydiplax sobrina (Rambur)

Known distribution: Bombay, Travancore, Malabar, Coorg, Bangalore, Bengal, Assam and Ceylon.

New records: Dehra Dun (U.P.), Kangra (H.P.) and Hoshiarpur (Punjab).

Diplocodes nebulosa (Fabricius)

Known distribution: West coast of India, Madras, Fraserpet, Coorg, Mysore, Ceylon, Australia, Java and Lower Burma.

New records: Dehra Dun (U.P.) and Kangra (H.P.).

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22. HEXAGONAL CELL OF LAC INSECT

The normal shape of the cells of lac insects is elongate for male and globular for female. All lac male insects perish after mating and then entire colonies consist of females. A single female lac cell is normally smoothly rounded. However, occurrence of hexagonal abnormal cells, referred to as 'crown shaped cell' (Mahdihassan 1968), has also been reported occasionally.

Hexagonal cells are not characteristic of any particular species of lac insect or the host-plant (Chauhan 1967), but they have been so far noticed only in 3 species of lac insects:

(i) Mahdihassan (1948) has reported that in *Kerria communis* some male insects on dispersal and due to sex reversal become hexagonal females.

(ii) Mahdihassan (1968) has reported that such crown shaped cells are numerous in *Kerria sindica*.

(iii) Chauhan (1967) has found such cells in both *rangeeni* and *kusumi* forms of common Indian lac insect, *Kerria lacca*.

The number of host-plants, on which such cells have been reported earlier, is also small. Whereas the above records of Mahdihassan are on *Zizyphus jujuba*, *Ficus mysorensis* and *Acacia arabica*, Chauhan (1967) has found them on 9 plant species, excluding *Ficus*.

Recently in our colonies of lac insects, one hexagonal cell, belonging to *Kerria* sp., has been growing on a fig plant, *Ficus carica* Linn. (Fam. Moraceae), at the Science College campus of the Patna